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The Fission Cross Sections of ^{230}Th, ^{232}Th, ^{233}U, ^{234}U, ^{236}U, ^{238}U, ^{237}Np, ^{239}Pu and ^{242}Pu Relative ^{235}U at 14.74 MeV Neutron Energy

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ABSTRACT

The measurement of the fission cross section ratios of nine isotopes relative to ^{235}U at an average neutron energy of 14.74 MeV is described with particular attention to the determination of corrections and to sources of error. The results are compared to ENDF/B-V and to other measurements of the past decade. The ratio of the neutron induced fission cross section for these isotopes to the fission cross section for ^{235}U are: ^{230}Th - 0.290 ± 1.9%; ^{232}Th - 0.191 ± 1.9%; ^{233}U - 1.132 ± 0.7%; ^{234}U - 0.998 ± 1.0%; ^{236}U - 0.791 ± 1.1%; ^{238}U - 0.587 ± 1.1%; ^{237}Np - 1.060 ± 1.4%; ^{239}Pu - 1.152 ± 1.1%; ^{242}Pu - 0.967 ± 1.0%.

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